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COTTON APHID



a, Curled infested leaves; b, aphids on under side of leaf; c, aphids on stem; d, honeydew on leaf; e, winged female; f, wingless female; g, young. a, b, c and d actual size; females and young about 14 times actual size.

(See other side for life history and control)

Picture Sheet No. 17

COTTON APHID

(*Aphis gossypii* Glov.)

Life History and Injury

The cotton aphid, also known as the cotton louse and the melon aphid, is found throughout the United States. It is a general feeder and, in addition to damaging cotton, is a pest of okra, melons, squash, cucumbers, and other cucurbits. It is a small, soft-bodied, sucking insect, in color ranging from light yellow to dark green or almost black. In the Northern States both sexes occur and eggs are laid, but in the South only females that give birth to living young are known. Some of the adults are winged for flying to other plants, while others are wingless. These aphids spend the winter on various weeds, from which they spread to cotton early in the spring. Reproduction is continuous throughout the year in the South and becomes very rapid during warm weather. There are no distinct broods; aphids of all sizes are present on the under side of the leaves and on the stems of plants. Ladybird beetles and other predators, parasites, diseases, and unfavorable weather, are important natural factors in controlling aphids.

Aphids are present in almost every field of growing cotton. During cool, wet springs they often cause curling of the leaves, stunting of growth, or even the death of small cotton seedlings. They do more damage later in the season by causing the leaves to curl and fall from the plants before the bolls are mature. The premature shedding of leaves causes serious losses in yield and grade of cotton. Aphids secrete a sticky substance known as honeydew, which drops on the leaves and bolls and gives the plants a glossy appearance. Honeydew falling on the open bolls also makes the lint gummy and difficult to gin. A fungus often develops in the honeydew, which causes the plants to appear black, or sooty.

Control

Aphid infestations often follow the use of calcium arsenate, DDT, and certain other insecticides for the control of cotton insects. On fruiting cotton they seldom occur in damaging numbers except under such conditions, but seedling cotton is frequently infested. It is more profitable to prevent the aphids from becoming numerous by adding nicotine or benzene hexachloride to dusts used to control other cotton insects than it is to check a serious aphid outbreak. The following insecticides in combination with calcium arsenate will prevent an aphid build-up if properly applied under favorable conditions: (1) Nicotine 2 percent in alternate applications or 1 percent in all applications; (2) benzene hexachloride sufficient to give 3 percent of the gamma isomer in every application or alternate applications at the rate of 10 pounds of the dust per acre; (3) 20 percent of toxaphene applied at the rate of 10 pounds of the dust per acre in every application; (4) benzene hexachloride sufficient to give 1 percent of the gamma isomer in every application of special neutral, or low-lime, calcium arsenate or 2 percent of the gamma isomer in alternate applications.

Heavy infestations of aphids may sometimes be controlled with benzene hexachloride dust at the approximate rate of one-half pound of the gamma isomer per acre or with 2 or 3 percent of nicotine in a suitable alkaline carrier. The insecticide must be thoroughly mixed with the dust carrier, preferably by special mixing machinery in a commercial plant. Best results are obtained by making applications when the air is quiet. It is necessary that dusts stay down among the plants, not rise and float away as often happens when dust applications are made during midday. Complete coverage of the plants is necessary.

Caution.—Insecticides are poisonous and should be handled with care. Store in a dry place where children and animals will not have access to them.

Revised April 1949

U. S. Government Printing Office